IN THE UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF TEXAS HOUSTON DIVISION

AMERICAN IMAGING SERVICES, INC., Plaintiff,	§	
VS.	§	CIVIL ACTION NO. H-97-1394
INTERGRAPH CORP., Defendant.	§	

MEMORANDUM AND OPINION

In this patent infringement lawsuit, plaintiff, American Imaging Services, Inc. ("American Imaging"), challenges software packages produced by defendant Intergraph Corporation ("Intergraph"). American Imaging alleges that these software packages infringe American Imaging's United States Patent No. 5,353,393 (the "'393 patent"). Intergraph asserts that the '393 patent is invalid under 35 U.S.C. § 102(a), because it was anticipated by prior art, and under 35 U.S.C. § 103, because it was obvious in light of the prior art. Intergraph also asserts that the '393 patent is unenforceable under the "on-sale bar" of 35 U.S.C. § 102(b). The prior art Intergraph asserts is the SuperPaint software program, copyrighted in 1986 and sold in early 1987,

and the FORM:DRAFT software program, used beginning in 1985 and copyrighted in 1986.

The issues before this court are the construction of the claims of the '393 patent and Intergraph's motion for summary judgment on invalidity based on anticipation, obviousness, and the on-sale bar. This court held a hearing on claim construction under *Markman v. Westview Instruments, Inc.*, 116 S. Ct. 1384 (1996). Intergraph's arguments for claim construction are also the basis for Intergraph's motion and supplemental motion for summary judgment of invalidity, based on the prior art and the on-sale bar. (Docket Entry Nos. 20 and 36). Both parties have filed lengthy briefs and extensive summary judgment evidence in support of their claim construction arguments and their positions on summary judgment.

This court first construes the claims of the '393 patent at issue. Based on this claim construction, the entire record before this court, and the applicable law, this court GRANTS Intergraph's motion for summary judgment. The reasons for these rulings are set out below.

I. Background

The software programs at issue in this case are computer graphics editing programs. The '393 patent, entitled "Apparatus and Method for Manipulating Scanned Documents in a Computer Aided Design System," was disclosed in an application filed

on June 14, 1989. Like the programs Intergraph asserts as prior art, the '393 patent addressed a problem presented by the increasing use of computers in design and drafting work. That problem is the need to integrate the new technology of computer-generated and computer-stored designs with existing "hard" or paper copies of design documents. If paper copies cannot be converted to a computer-readable electronic form, the documents cannot be changed or edited using computer technology. The problem is how to convert a paper document into computer-readable electronic form, to permit a user to change that document using computer tools, and to produce an edited version of that document in both hard copy and electronic form.

In 1987, William Opincar, the owner of American Imaging, hired William Bennett to write a software program to address this problem. Bennett wrote LunaLink and LunaEdit, which were intended for use as add-ons to existing computer-aided design (CAD) software programs. American Imaging sold these programs in the summer of 1988. However, the programs did not realize commercial success. Users encountered problems in using the software with existing programs. In addition, the Luna software only worked on one manufacturer's existing CAD software. In early 1989, American Imaging hired Wylie "Skip" McDonald, a computer software programer, to work on improving the Luna software and expanding its compatibility

with other software. McDonald's work did not lead to any new program. The Luna software has not been marketed since 1989.

It is undisputed that the '393 patented software program, the SuperPaint program, and the FORM:DRAFT program, tackle the problem of converting a hard copy of a design document into a computer image by first having the document "scanned." The scanning process converts the document into electronic data, in the form of "bits" or "pixels." The scanner reads the document as hundreds of horizontal lines, each line consisting of hundreds of "pixels." As the scanner reads across the line, it records each pixel as white or black. The complete picture is then stored in the computer's electronic memory as a "bit map." That data file and resulting image are the "raster" image.

Raster images are not the most efficient or flexible means to store or use graphic and related information. Computer programs rely on vector technology to store graphic and other features. Unlike raster images, which store the information as bit maps, vector images are stored in mathematical form. Elements such as circles, squares, and arcs can be created using these mathematical formulas. Vector images require many fewer bits of computer memory to describe each element of the image. As a result, vector images require much less processing time when manipulating the image.

The '393 patent, SuperPaint, and FORM:DRAFT all seek to improve earlier approaches to converting a hard copy into an image that can be electronically manipulated efficiently and easily. One earlier approach, noted in the prior art description of the '393 patent, required manual copying of an image using a "graphics tablet," an input device that allows a user to pick points of an image and place them into a vector image on the computer. Once enough points were placed on the computer, the user could connect the dots to create lines. This process was labor-intensive, time-consuming, and tedious. Another known method, also noted in the '393 patent, was to scan a hard copy to produce a raster image, then use a software program to convert the individual pixels of the raster image into individual vectors in a vector image. However, this process did not require a smaller number of bits; an image that would typically be described by only one mathematical formula in a vector image would instead be made up of a large number of tiny vectors, each corresponding to a pixel in the original raster image.

The object of the invention embodied in the '393 patent was to provide a computer program that facilitated the reproduction and editing of hard copy documents with a CAD system; improve the apparatus and method for manipulating scanned images using CAD commands; and allow the production of raster image output from CAD systems. (Docket Entry No. 25, Ex. A, '393 patent, Col. 2, ll. 1-17).

It is undisputed that both a program created under the '393 patent and the SuperPaint program permit the user to scan a hard document to create a raster image; call up that raster image on the computer screen; modify the raster image using vector commands; merge the raster image and the vector changes to the raster image to produce an edited raster image; display the edited raster image on the computer screen; save and store the edited raster image electronically; and print the edited raster image out in a hard copy. (Docket Entry No. 21, pp. 7-8; Docket Entry No. 25, Ex. C, Deposition of Bennett, pp. 168-69; Docket Entry No. 23, Declaration of Snider, ¶¶ 12, 13). The parties appear to agree that the FORM:DRAFT program also allows the creation of a raster image and display of a vector-based image; the manipulation of the raster image with vector commands; and the creation, display on the computer screen, electronic storage, and printing of a hard copy of the edited raster image. American Imaging argues that SuperPaint is not prior art because it is not a CAD system using CAD commands, while the '393 patent is limited to CAD systems. American Imaging argues that FORM:DRAFT is not prior art because, while it is a CAD system using CAD commands, it does not merge the vector and raster images to create an edited raster image, but instead requires copying.

The threshold dispositive issue is the meaning of the terms "CAD" and "CAD command" as used in the '393 patent. Plaintiff American Imaging argues that

"[w]hen the correct claim construction is applied, the SuperPaint reference cited by the Defendant as prior art does not invalidate the patent-in-suit under §§ 102 or 103." Docket Entry No. 31, p. vii). American Imaging argues that properly construed, the '393 patent claims the ability to integrate raster and vector-based images on a CAD system. American Imaging argues that SuperPaint does not anticipate or make the '393 patent obvious because SuperPaint is not a CAD program; it does not include features that allow the creation of accurate and sophisticated engineering and architectural designs necessary for a system to be a CAD system.

Intergraph responds that the '393 patent does not define a CAD system or CAD commands so narrowly. Intergraph argues that the '393 claims and specifications expressly adopt broad definitions of a CAD system and CAD commands, definitions that encompass programs such as SuperPaint.

In its supplemental motion for summary judgment, Intergraph argues that even under American Imaging's narrow definition of CAD, the FORM:DRAFT program is clearly a CAD system that uses CAD commands. American Imaging agrees that FORM:DRAFT is a CAD system but disputes that FORM:DRAFT embodies every element of the claims of the '393 patent. (Docket Entry No. 40, p. 6).

On June 12, 1998, this court held a *Markman* hearing for the purpose of construing the claims of the '393 patent. Both sides have submitted briefs and

proposed claim constructions. Both parties have submitted an extensive summary judgment record.

II. Claim Construction

A. The Legal Standards for Claim Construction

The first step in any invalidity analysis is claim construction, a matter of law. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995), *aff'd*, 116 S. Ct. 1384 (1996); *see also Laitram Corp. v. Morehouse Indus., Inc.*, 143 F.3d 1456, 1461 (Fed. Cir. 1998); *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1456 (Fed. Cir. 1998) (en banc). In construing a claim, a court principally consults the evidence intrinsic to the patent, including the claims, the written description, and any relevant prosecution history. *See Bell & Howell Document Management Prods. Co. v. Altek Sys.*, 132 F.3d 701, 705 (Fed. Cir. 1997); *Vitrionics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582-83 (Fed. Cir. 1996).

A court first looks to the words of the claim themselves–both asserted and unasserted–to define the scope of the patented invention. *Vitrionics*, 90 F.3d at 1582-83. Although words in a claim are generally given their ordinary and customary meaning, a patentee may use terms in a manner other than their ordinary meaning as long as the special definition of the term is clearly stated in the patent specification or file history. *Id*; *see also York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99

F.3d 1568 (Fed. Cir. 1996); *Hoechst Celanese Corp. v. BP Chems. Ltd.*, 78 F.3d 1575, 1578 (Fed. Cir. 1996) ("A technical term used in a patent document is interpreted as having the meaning that it would be given by persons experienced in the field of the invention, unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning." (citations omitted)).

The second step for a court is to review the specification to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning. *See Vitrionics*, 90 F.3d at 1582. The specification contains a written description of the invention, which must be clear and complete enough to enable those of ordinary skill in the art to make and use it. *Vitrionics*, 90 F.3d at 1582. The specification is always highly relevant to the claim construction analysis. *Id.* The specification acts as a dictionary if it expressly defines terms used in the claims or it defines terms by implication. *Markman*, 52 F.3d at 979. Claims must be read in light of the specification of which they are a part. *Id.* However, "claims are not to be interpreted by adding limitations appearing only in the specification. . . . [P]articular embodiments appearing in a specification will not be read into the claims when the claim language is broader than such embodiments." *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994); s*ee also Ethicon Endo-Surgery, Inc. v. United States Surgical Corp.*, 93 F.3d 1572 (Fed. Cir. 1996).

A court may also consider the prosecution history of the patent. *Markman*, 52 F.3d at 980. The prosecution history contains the inventor's express representations regarding the scope of the claims. *Vitrionics*, 90 F.3d at 1582-83. Such representations can limit the scope of the claims. *Id.* "Prosecution history 'limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.'" *CVI/BETA Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1155 (Fed. Cir. 1997) (quoting *Southwall Techs. Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995)).

If, upon examination of the intrinsic evidence, the meaning of the claim language is sufficiently clear, resort to extrinsic evidence, such as treatises, technical references, and expert testimony, should not be necessary. *Spectrum Intern., Inc. v. Sterilite Corp.*, 1998 WL 854715, at * 4 (Fed. Cir. Dec. 9, 1998) (quoting *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed. Cir. 1998)); *Alpine Lace Brands, Inc. v. Kraft Foods, Inc.*, 1998 WL 738600, at *4 (Fed. Cir. Oct. 22, 1998). "The claims are the focus of the construction inquiry and extrinsic evidence 'may not be used to vary or contradict the claim language.'" *Alpine Lace Brands, Inc.*, 1998 WL 738600, at *4 (quoting *Mantech Envtl. Servs., Inc. v. Hudson Envtl. Servs., Inc.*, 152 F.3d 1368, 1373 (Fed. Cir. 1998)). "[E]xtrinsic evidence including expert testimony is not to be relied upon for purposes of claim interpretation, other than to aid the judge

in understanding the technology; such evidence is only 'an aid to the court in coming to a correct conclusion as to the true meaning of the language employed in the patent.'" *EMI Group N. Am., Inc. v. Intel Corp.*, 157 F.3d 887, 892 (Fed. Cir. 1998) (quoting *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998)); *see also Mantech*, 152 F.3d 1373 ("Although this information always may be admitted by the trial court to educate itself about the patent and the relevant technology, the claim and the written description remain the primary and more authoritative sources of claim construction."). If the patent documents are unambiguous, expert testimony regarding the meaning of a claim is entitled to no weight. *Vitrionics*, 90 F.3d at 1584; *Southwall*, 54 F.3d at 1578. Although technically extrinsic evidence, a court is free to consult technical treatises or dictionaries at any time in order better to understand the underlying technology and to determine the meaning of claim terms. *See Vitrionics*, 90 F.3d at 1584 n.6; *see also Cybor*, 138 F.3d at 1459. However, a court may not use sources such as dictionary definitions to contradict a definition found in the intrinsic evidence. *See Vitrionics*, 90 F.3d at 1584 n.6.

B. Construction of the Claims of the '393 Patent

1. The Issue in Dispute

"[W]hat [the parties can] agree on [i]s that the main thing [they] differ on is what is a vector-based image, what is a CAD system, and what are CAD

commands." (*Markman* Hearing, Statement of Donoughue, p. 8). American Imaging defines a CAD system as a system that uses vector-based images, not merely vectors, and CAD commands, to produce accurate, sophisticated drawings and blueprints suitable for application in engineering and architecture. American Imaging asserts that to be a CAD system, a system must have the ability to associate nongraphical data–such as the designation of a building material and its manufacturer, cost, weight, and other specifications–with graphical data; the ability to measure and automatically dimension items on a screen; and the ability automatically to connect items on the screen. (Docket Entry No. 31, p. vi). American Imaging agrees that the '393 patent is a computer graphics editing program, but asserts that while all CAD programs are computer graphics editing programs, not all computer graphics editing programs are CAD programs.

Intergraph asserts that those skilled in the art do not distinguish between a vector image and a vector-based image. Intergraph argues that the plain meaning of the term "computer-aided design" and the broad definition the '393 patent gives the terms CAD and CAD command defeat American Imaging's belated attempt to narrow the definition to a system that incorporates specific features necessary to produce sophisticated, accurate, engineering and architectural plans. Intergraph describes the differences between a CAD system such as SuperPaint, and CAD systems that are

accurate and detailed enough to be used to create architectural and engineering plans, as one "in degree, not of kind. It's just a more sophisticated system." (*Markman* Hearing, Statement of Furniss, p. 109).

This court must first decide whether American Imaging's proffered definition of a "CAD" system is supported by the language of the claims, the specifications, and the prosecution history.

2. The Claims and Specifications in the '393 Patent

The '393 patent has six independent claims (Claims 1, 14, 20, 26, 30, and 37) and thirty-six dependent claims. Claim 1 of the '393 patent states:

> In an electronic data processing system, apparatus for manipulating a scanned document, comprising, in combination:
>
> first means for electronically displaying a first image representing the scanned document, said first image being a raster image comprised of a plurality of discrete picture elements defining at least one graphic element having a first shape;
>
> second means for electronically displaying in response to user input commands, simultaneously with the display of said raster first image, a second image, said second image being a vector-based image comprised of a plurality of vectors having respective defined starting and ending points having predetermined positions relative to said picture elements of said raster first image and representing user-generated alterations to the first shape of said at least one graphic element; and
>
> merging means for merging said first and second images to provide an edited raster image wherein

> said at least one graphic element has a second shape differing from said first shape in accordance with at least one of said plurality of vectors displayed responsive to the user input commands.

(Docket Entry No. 25, Ex. A, Col. 9-10, ll. 55-68, 1-10). Claim 8 limits Claim 1 by defining the second means from Claim 1 as comprising a computer-aided design system. (Col. 10, ll. 60-63). Claim 13 also references computer-aided design. It states, "further including manipulating means responsive to user input CAD commands for simultaneously manipulating a hybrid image including both said first, raster, image and said second, vector-based, image." (Col. 11, ll. 22-26).

A court must first examine the words chosen for the patent claims and specifications, giving those words the plain meaning used by those skilled in the art, unless the patent itself specifies another meaning. *York Prods.*, 99 F.3d at 1568; *Vitrionics*, 90 F.3d at 1582-83; *Hoechst Celanese Corp.*, 78 F.3d at 1578. Nothing in the words of the claims of the '393 patent limits the invention to the production of precise, accurate, engineering and architectural drawings. Nothing in the words of the claims limits the application to a system capable of producing precise, accurate, engineering and architectural drawings by associating nongraphical and graphical data and by automatically dimensioning and measuring. To the contrary, the '393 patent

claims broadly describe the types of documents, designs, and drawings that can be produced by the invention.

The broad definition of a CAD system and CAD commands in the claims of the '393 patent is consistent with the definition expressly set out in other parts of that patent. The '393 patent begins by describing the patented invention in relationship to a CAD system:

> FIELD OF THE INVENTION
>
> This invention relates to computer aided design systems and in particular to an apparatus and method for manipulating scanned documents in an existing computer aided design system.

(Docket Entry No. 25, Ex. A, '393 Patent, Col. 1, ll. 10-15).

The patent then gives a explicit definition of a CAD system in terms of its functions and capabilities:

> BACKGROUND OF THE INVENTION
>
> Computer aided design (CAD) packages are commonly used to create and edit drawings and other graphic displays on a computer screen or other cathode ray tube (CRT) display. CAD systems are particularly well-suited for producing engineering design drawings by allowing the user to enter a series of commands to produce certain standard elements of the drawing, such as circles, squares and lines, at selected locations on

> screen to effect a particular design. A locator device such as a pointer, cursor, "mouse" or cross-hair, is used to select the position on the screen at which a particular element is to be drawn. Changes to the drawing can be made directly on screen. The display scale can be changed to zoom in on selected portions of the drawing.

(*Id.*, Col. 1, ll. 16-31).

This functional definition of a CAD system is a broad definition, generally encompassing the creation and editing of "drawings and other graphic displays on a computer screen." Nothing in this express functional definition states that a CAD system is limited to a system that includes the functions of associating nongraphical data, such as materials and material composition and vendors, with the graphical items shown on the screen, or the functions of automatically dimensioning and measuring.

The definition also describes CAD commands broadly, as commands that "produce certain standard elements of the drawing, such as circles, squares and lines, at selected locations on screen." Nothing in this definition limits CAD commands to commands that use vector language to add nongraphical data to an engineering drawing.

The specifications for the '393 patent continue this broad definition of CAD systems and CAD commands. The specifications state that a conventional

computer-aided design system "receives user input . . . and translates the inputs into selected commands to control a software-implemented display driver 14, which in turn controls a hardware display device 16. The CAD commands are used to produce a design drawing or the like on a computer screen display." (Docket Entry No. 25, Ex. A, '393 Patent, Col. 4, ll. 10-17). The functional description continues by giving an example:

> the user can control CAD system 10 to produce a circle, square, line or other standard drawing feature, at a particular position on the display by positioning the locator device at the selected position on the display and entering the appropriate command. CAD system 10 will respond to the user input by controlling display driver 14 and display device 16 to produce the selected drawing feature at the selected location on the screen display.

(Docket Entry No. 25, Ex. A, '393 Patent, Col. 4, ll. 21-29). The patent informs the reader that "the system and method according to the present invention allow an operator to manipulate raster-based, scanned documents using standard computer aided design commands, which substantially reduces the time and expense associated with the production of design drawings and other graphic displays, both on screen and in hard copy form." (Docket Entry No. 25, Ex. A, '393 Patent, Col. 9, ll. 40-46).

Each description is broad, not limited to systems or commands with the functions necessary to produce precise, accurate, engineering plans and architectural blueprints.

As support for its argument that a CAD system must include the functions of associating nongraphical and graphical data and automatic dimensioning and measuring, American Imaging cites language in the specification stating that "CAD systems are particularly well-suited for producing engineering design drawings by allowing the user to enter a series of commands to produce certain standard elements of the drawing, such as circles, squares and lines, at selected locations on the screen to effect a particular design." (Docket Entry No. 25, p. 11; Ex. A, '393 Patent, Col. 1, ll. 21-26). From this statement, American Imaging argues that "a CAD system must be capable of producing engineering drawings and the like." (Docket Entry No. 25, p. 11). The clear language of the claims and specifications is inconsistent with this argument. The description of a CAD system and CAD commands in the claims includes, but is not limited to, a system and commands that can produce precise, accurate, engineering drawings. Even the reference to engineering design drawings emphasizes the use of vector commands to produce circles, squares and lines. Such tasks need not include the ability to associate nongraphical data with graphical drawings on the screen or to perform automatic dimensioning or measuring functions.

Paul Bennett, a co-inventor of the '393 patent, confirmed this interpretation in his deposition. When asked if CAD systems are "never used for anything but engineering and technical drawings," Bennett answered, "I wouldn't go as far as to say that, but that is their primary purpose in life." Bennett also admitted that "CAD Systems are often used for designs that do not require mathematical certainty." (Docket Entry No. 25, Ex. C, Deposition of Bennett, p. 105).

A careful review of the specification and prosecution history shows that American Imaging neither explicitly nor implicitly defines the term "CAD" more narrowly than the broad functional definition provided in the '393 patent. The '393 patent states that CAD is used to "create and edit drawings *and other graphic displays* . . ." (Col. 1, ll. 18-21) (emphasis added). Nowhere in the claims or specifications does the patent mention the "intelligent" capabilities as functions necessary to make a system a CAD system: the capabilities of associating nongraphical data with the graphical drawings and the ability to dimension and measure automatically. To interpret the patent as American Imaging urges, this court would have to infer those limiting features from the use of the term "computer-aided design." The clear language of the claims and the specifications makes it clear that American Imaging defined that precise term broadly, not with the limitations it now asserts.

American Imaging also asserts that the use of the term "vector-based image" as opposed to "vector" in the '393 patent supports its narrower interpretation of a CAD system and CAD command. American Imaging contends that a vector image differs from a vector-based image: "a vector-based image as used in the patent is intended to mean something more than an image composed of mathematical vectors. . . . The vector-based image defined by the patent is much more [than a mathematical vector]." (Docket Entry No. 25, p. 11). Intergraph, on the other hand, does not distinguish between a vector-based image and a vector image. Intergraph describes vector language as an efficient method of storing graphical data in a computer's memory "whereby graphic features are electronically stored in mathematical form." (Docket Entry 21, p. 4).

The claim language of the '393 patent does not support American Imaging's argument. Claim one defines a vector-based image as "comprised of a plurality of vectors having respective defined starting and ending points." (Docket Entry No. 25, Ex. A, '393 Patent, Col. 9, ll. 67-68). The specification states that in the vector database, "design features are represented by a plurality of discrete vectors, selected ones of which have starting and ending point coordinates with reference to a predetermined origin. . . . Other ones of the vectors may represent a predetermined geometric shape, such as a circle, at a predetermined position relative to defined

reference position." (Docket Entry No. 25, Ex. A, Col. 4, ll. 31-34, 35-37). The specification states that once the raster and vector images are overlayed, the user can do one of two things with the superimposed images on the computer screen. The user can make changes, using standard CAD commands, to the raster image. These changes are shown on top of the raster image on the screen, as a vector image. "What appears on the screen represents a composite image with both raster and vector elements shown. The vector elements represent the CAD generated changes." (Col. 5, ll. 33-35). The user may also "reproduce the raster image as a CAD image by simply tracing over the raster image using the proper sequence of CAD commands, thereby producing a vector-based image and eliminating the need for the raster image." (Col. 5, ll. 36-40).

The specification makes it clear that, as used in the '393 patent, a "vector-based" image is generally an image created by the mathematical language of vectors, implemented through CAD commands. The use of the term "vector-based" does not support American Imaging's attempt to narrow the meaning of a CAD system or a CAD command.

Figure 4, the only drawing of a figure in the '393 patent application, also supports a broad definition of a CAD system, and CAD command. As used in Figure 4, a CAD command uses a vector to increase the size and shape of the image displayed on the screen. This function is not inconsistent with the use of other functions, such as

the ability to associate nongraphical data with graphical data, or to produce precise, accurate, engineering or architectural drawings. The function demonstrated in Figure 4 does not require the involvement or presence of those other features. Even without those other features, the commands that create Figure 4 are still CAD commands in a CAD system.

Bennett's deposition testimony is consistent with this conclusion. When asked if it is a CAD feature to be able to duplicate features, Bennett answered, "I think most CAD packages have something like that, yes." (Docket Entry No. 25, Ex. C, Deposition of Bennett, p. 129). Referring to Figure 4, Bennett testified that "computer-aided design commands," as used in the '393 patent, means "the commands in the CAD system that you use to make those modifications." (*Id.*, p. 222).

In his videotaped declaration, Bill Snider duplicated Figure 4. Once he scanned the picture into the raster layer of the computer, he "put the vector layer of SuperPaint on top of the raster layer and created the additional lines that you see added in figure 4-b and then separately in 4-c and also created other shapes to erase or cover over the parts of the 4-a drawing that no longer needed to show to create the 4-d picture." (*Markman* Hearing, Statement of Snider, p. 82). SuperPaint does not include the functions of associating nongraphical data with graphical data and automatic dimensioning and measuring. However, SuperPaint duplicated Figure 4, which

American Imaging claimed in the '393 patent to be the result of using CAD commands in a CAD system.

The prosecution history also supports Intergraph's position. The '393 patent issued after a lengthy prosecution at the PTO on October 4, 1994, with a priority date of June 14, 1989. The PTO Examiner rejected the first twenty-three claims. In the second round of amendments after the rejection, the inventors of the '393 patent stated that "[i]ndependent claims 1, 8, 14 and 20 are amended to more particularly define the invention as being utilized to manipulate scanned documents in a computer aided design system." (Docket Entry No. 40, Ex. 16, p. 6). The PTO then rejected the patent application as obvious. In the amended application, the inventors stated that "[i]ndependent claims 1, 8, 14, 20 and 27 are amended to more particularly define the invention as being utilized to manipulate scanned documents in a computer aided design system for changing the shape of geometric objects contained in a scanned, raster image using computer aided design input commands." (Docket Entry No. 40, Ex. 18, pp. 5-6). The inventors later stated that the alleged prior arts–U.S. Patent No. 4,905,185, issued to Sakai; and U.S. Patent No. 4,843,569, issued to Sawada–"clearly do not disclose or suggest the claimed invention for altering the shape of geometric objects by simultaneously displaying, with a scanned raster image, a vector-based image in registration with the raster image, in which the user defines the desired

alterations on the display with input commands and then merges the images to produce an edited raster image of the altered geometric shape." (*Id.*, pp. 6-7). The Examiner again rejected this argument, stating that "Suwada's [sic] document D1 can be any well known form such as Japanese characters, notations or graphic objects." (Docket Entry No. 40, Ex. 19, p. 3). If American Imaging intended to define a CAD system narrowly, limited to a system that incorporates the ability to associate nongraphical data and automatically dimension and measure, American Imaging would have made this distinction in the patent prosecution to distinguish the '393 patent from the prior art.

In the final round of the prosecution of the '393 patent, while attempting to distinguish *HyperCard*, the applicants stated the following:

> As is known in the art, and as described in the sentence bridging pages 7-8 of applicants' specification, vector images are stored in a vector database which includes, for straight lines for example, selected terminal coordinates, line thickness, etc. For other shapes, a vector based CAD system also includes such "intelligent", *or mathematical, description of the image portions, thus enabling storage of elements representing circles by storage of information relating to the coordinate location of the center and the radius of the circle*, rather than requiring storage of an entire field of pixels with some pixels turned ON and others turned OFF. . . . Such an approach is clearly simpler than a requirement for modification of each individual pixel of a raster scanned image.

(Docket Entry No. 40, Ex. 27, pp. 2-3) (emphasis added). The "intelligent" capability that American Imaging claims to be the hallmark of computer-aided design is the ability efficiently to store the information necessary to present an image, such as a circle, as a mathematical description. The "intelligent" capability that is necessary for a computer-aided design system is not stated as including the ability to associate nongraphical with graphical data or the ability to dimension and measure automatically, as American Imaging argues to this court.

At the *Markman* hearing, this court heard testimony from John Edward Akin, Ph.D., in support of American Imaging's position, and from Bill Snider, who testified in favor of Intergraph. Dr. Akin is a professor of mechanical engineering at Rice University in Houston, Texas. He testified that those skilled in the art understand that a CAD system is different from a painting system. In order to be a CAD system, certain capabilities or functions that would enable the products to be used in engineering or architectural applications must be present: it "has to provide accurate descriptions, complete descriptions, as complete as possible; and it has to have the associated non-graphical data. That's a key item. If it doesn't have the associative non-graphical data and ways to manipulate those data, then it's not a CAD system. It might be a sketching system or low level drawing system, but it's not a CAD system." (*Markman* Hearing, Testimony of Dr. Akin, pp. 35-36). By contrast, Bill Snider, who

developed the SuperPaint program, testified not as an expert in engineering, but as one knowledgeable about computer programming. Snider testified that a computer-aided design system is one that can "create and edit drawings and other graphic displays on a computer screen or other cathode ray tube"; the user can "enter a series of commands to produce certain standard elements of the drawing such as circles, squares, and lines at selected locations on screen to effect a particular design." (*Markman* hearing, Testimony of Bill Snider, pp. 79-80).

This court finds the intrinsic evidence sufficiently clear to construe the '393 patent. The plain language used in the claim and the definitions provided in the specification make it clear that the definition of computer-aided design means the ability to create and edit drawings and other graphic displays on a computer screen. This court considers Dr. Akin's and Bill Snyder's testimony to provide background information relevant to the technology at issue. *See EMI Group N. Am., Inc. v. Intel Corp.*, 157 F.3d 887, 892 (Fed. Cir. 1998) ("[E]xtrinsic evidence including expert testimony is not to be relied upon for purposes of claim interpretation, other than to aid the judge in understanding the technology; such evidence is only 'an aid to the court in coming to a correct conclusion as to the true meaning of the language employed in the patent.'" (quoting *Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1454 (Fed. Cir. 1998)); *see also Mantech*, 152 F.3d 1373 ("Although this information always may be

admitted by the trial court to educate itself about the patent and the relevant technology, the claim and the written description remain the primary and more authoritative sources of claim construction.").

Akin and Snyder, both familiar with CAD programs, provided conflicting testimony as to the meaning of computer-aided design. Dr. Akin gave a clear definition of computer-aided design in the context of sophisticated engineering applications. However, the '393 patent clearly defines CAD systems more broadly. Dr. Akin's testimony cannot be used as the basis for rewriting the functional definition of a CAD system set out in the '393 patent claims and specifications. *See Alpine Lace Brands, Inc.*, 1998 WL 738600, at *4 ("The claims are the focus of the construction inquiry and extrinsic evidence [such as expert testimony] 'may not be used to vary or contradict the claim language.'" (quoting *Mantech*, 152 F.3d at 1373)); *Bell & Howell*, 132 F.3d at 706 ("Once a dispute over claim construction arises, 'experts' should also not be heard to inject a new meaning into terms that is inconsistent with what the inventor set forth in his or her patent and communicated, first to the patent examiner and ultimately to the public.").

Intergraph points to the MCGRAW-HILL DICTIONARY OF ELECTRONICS AND COMPUTER TECHNOLOGY 91 (1984), which defines computer-aided design in broad terms, not limited to the type of precise, accurate engineering or architectural

applications that Dr. Akin used to describe the minimum functions of any CAD system. (*Markman* Hearing, Defendant's Ex. 1). *See Vitrionics*, 90 F.3d at 1584 n.6 ("Judges are free to consult [technical treaties and dictionaries] at any time in order to better understand the underlying technology and may also rely on dictionary definitions when construing claim terms, so long as the dictionary definition does not contradict any definition found in or ascertained by a reading of the patent document). The dictionary definition of CAD as "[t]he generation of computer automated designs for display on cathode-ray tubes" is similar in its breadth to the definition American Imaging used in its '393 patent: "Computer aided design (CAD) packages are commonly used to create and edit drawings and other graphic displays on a computer screen or other cathode ray tube (CRT) display." (Docket Entry No. 25, Ex. A, '393 Patent, Col. 1, ll. 18-21).

As defined in the patent, CAD "packages are commonly used to create and edit drawings and other graphic displays on a computer screen or other cathode ray tube (CRT) display." (Docket Entry No. 25, Ex. A, '393 Patent, Col. 1, ll. 18-21). If American Imaging had sought to limit the '393 patent to CAD systems that have the ability to associate nongraphical and graphical data and automatically to connect, measure, and dimension, capabilities necessary for architectural and engineering applications, it could have specifically provided for that narrower scope. *See Sextant*

Avionique, S.A. v. Analog Devices, Inc., No. 98-1063, 1999 WL 112040, at * (Fed. Cir. Feb. 26, 1999) ("While [the patent holder] was free to act as its own lexicographer and to define this term in a manner different from its plain meaning, . . . it has not done so here." (citations omitted)); *Renishaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998) ("Absent a special and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning.").[1]

American Imaging's argument fails. CAD, as defined in the '393 patent, is a broad term that refers to the ability "to create and edit drawings and other graphic displays on a computer screen or other cathode ray tube (CRT) display." A CAD system, as used in the '393 patent, includes, but is not limited to, a system that has the capability of associating nongraphical with graphical data and performing functions such as automatically dimensioning and measuring, and producing precise, accurate, engineering drawings.

With this claim construction, this court now turns to the pending motions for summary judgment.

---

[1] American Imaging argues that Intergraph's own patents specifically define CAD consistent with American Imaging's narrow definition. The point is that Intergraph used express narrow definitions of CAD in some of its patents.

III. Intergraph's Motion for Summary Judgment

A. The Applicable Legal Standards

Summary judgment is appropriate if no genuine issue of material fact exists and the moving party is entitled to judgment as a matter of law. FED. R. CIV. P. 56. Under FED. R. CIV. P. 56(c), the moving party bears the initial burden of "informing the district court of the basis for its motion, and identifying those portions of [the record] which it believes demonstrate the absence of a genuine issue of material fact." *Celotex Corp. v. Catrett*, 477 U.S. 317, 323 (1986); *Norman v. Apache Corp.*, 19 F.3d 1017, 1023 (5th Cir. 1994). The party moving for summary judgment must demonstrate the absence of a genuine issue of material fact, but need not negate the elements of the nonmovant's case. *Little v. Liquid Air Corp.*, 37 F.3d 1069, 1075 (5th Cir. 1994) (en banc). If the moving party fails to meet its initial burden, the motion for summary judgment must be denied, regardless of the nonmovant's response. *Little*, 37 F.3d at 1075.

When the moving party has met its Rule 56(c) burden, the nonmovant cannot survive a motion for summary judgment by resting on the mere allegations of its pleadings. *McCallum Highlands, Ltd. v. Washington Capital Dus, Inc.*, 66 F.3d 89, 92 (5th Cir. 1995). The nonmovant must go beyond the pleadings and designate

specific facts showing that there is a genuine issue for trial. *Little*, 37 F.3d at 1075 (citing *Celotex*, 477 U.S. at 325).

In deciding a summary judgment motion, "[t]he evidence of the non-movant is to be believed, and all justifiable inferences are to be drawn in his favor." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 255 (1986). "Rule 56 '*mandates* the entry of summary judgment, after adequate time for discovery and upon motion, against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case, and on which that party will bear the burden of proof at trial." *Little*, 37 F.3d at 1075 (citing *Celotex*, 477 U.S. 322).

Patents are presumed valid. 35 U.S.C. § 282 (1988). In rendering a decision on a motion for summary judgment, a court must "view the evidence presented through the prism of the substantive evidentiary burden" that would inhere at trial. *Rockwell Int'l Corp. v. United States*, 147 F.3d 1358, 1362 (Fed. Cir. 1998) (quoting *Anderson*, 477 U.S. at 255). Therefore, a determination of invalidity on summary judgment must be predicated on facts established by clear and convincing evidence. *Id*; *see also Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 881 (Fed. Cir. 1998) ("[T]he movant's burden [is] to show invalidity of an issued patent by clear and convincing evidence."). However, summary judgment is as appropriate in a patent case as in any other, if no genuine issue of material fact is present and the

movant is entitled to judgment as a matter of law. *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed. Cir. 1995). Claim interpretation, as a question of pure law, is amenable to summary judgment and disagreement over the meaning of a term within a claim does not necessarily create a genuine issue of material fact. *Id.*

To ascertain the scope of the relevant prior art, a court examines the field of the inventor's endeavor and the particular problem with which the inventor was involved. *Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 881 (Fed. Cir. 1998). The prior art used in litigation must be at least as relevant as that examined by the PTO. *See Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1180 (Fed. Cir. 1995) (citing *LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n*, 958 F.2d 1066, 1075-76 (Fed. Cir. 1992)). The production of evidence of prior art *not* considered by the Patent and Trademark Office may carry more weight in defeating a presumption of validity, because the district court is not called upon to disagree with the PTO or required to defer to it as to the effect of that evidence upon the validity of the patent. *American Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1369-70 (Fed. Cir. 1984).

B. Determination of Relevant Prior art

1. SuperPaint as the Prior Art

In 1985, Bill Snider, a software designer from San Diego, California, began to work on a new software program to be used on an Apple Macintosh computer. (Docket Entry No. 21, p. 7; Docket Entry No. 23, ¶ 7). This new software program came to be known as SuperPaint 1.0 ("SuperPaint"). SuperPaint and the SuperPaint Manual were both copyrighted in 1986. (*Id.*). SuperPaint was sold commercially for the first time in either late 1986 or early 1987. During the period from 1987 to 1995, SuperPaint versions 1.0, 1.1, 2.0, 3.0, and 3.5 were produced and sold. SuperPaint won awards from MacWorld magazine.

SuperPaint was a combination of two Macintosh programs, MacPaint, which used a raster image, and MacDraw, which used a vector image. Snider labels it a "graphics editor." (*Markman* Hearing, Testimony of Snider, p. 79). SuperPaint combined these two programs to create a program that was capable of using vector commands to modify raster images. It had the ability to "create and edit drawings and other graphic displays on a computer screen or other cathode ray tube." (*Id.*). Snider admits that SuperPaint could not be used to design a building such as a sky scraper; it is not particularly well suited for producing engineering design drawings. (*Id.*, p. 80). However, it did enable the user to perform the following tasks:

1. Scanning an image to create a raster file;

2. Calling up the raster image on the computer screen;

3. Making modifications in the raster image using vector commands; and

4. "Merging" the raster image and the vector changes to that image to produce an "edited raster image" which can be viewed on the screen, saved electronically and printed out.

(Docket Entry No. 21, p. 7).

Intergraph asserts that the Examiner did not consider SuperPaint. Intergraph acknowledges that a reference to SuperPaint appears in THE COMPLETE HYPERCARD HANDBOOK, which the Examiner did consider. However, Intergraph states that "there is no description of its functions and nothing to inform the Examiner of its significance. There is no evidence that the Examiner considered SuperPaint in any way." (Docket Entry No. 21, p. 12, n.3).

The prosecution history shows that the Examiner used HyperCard as a reference against the invention. (Docket Entry No. 25, Ex. A, '393 Patent, "References Cited"). HyperCard is a computer program that allows a user to approximate a stack of conventional index cards with text, drawings, animations, and links between cards; in essence, an early version of the "hypertext" now common on the Worldwide Web. (Docket Entry No. 25, Ex. F). The program was not used primarily for creating

drawings, but drawings could be incorporated into HyperCard. The HyperCard manual refers to SuperPaint twice. It states, "SuperPaint (Silicon Beach Software) combines both the paint and draw environments into one, each environment getting its own layer domain in a document." (Docket Entry No. 25, Ex. F, p. 195). As Intergraph states, "[t]here is nothing in this brief reference to alert the Examiner to the fact that SuperPaint could perform the allegedly unique function claimed in the '393 application," the function of manipulating a scanned document in an electronic data processing system by displaying the raster image and the vector image; making changes in the vector image; then merging the raster and vector images to create an edited raster image that could be saved, displayed, and printed. (Docket Entry No. 32, p. 15).

SuperPaint is more relevant than the prior art used by the Examiner. There is no evidence that the Examiner considered it in the '393 patent prosecution.

2. FORM:DRAFT as the Prior Art

FORMTEK, Inc., formed in 1982, is a computer software company in California; it is now a subsidiary of Lockheed-Martin Corporation. FORM:DRAFT is a drafting program, "developed to provide a full complement of computer-aided drafting capabilities that are used in a familiar 'drafting board' environment." (Docket Entry No. 36, p. 4). FORM:DRAFT was used at Bell Pennsylvania as early as 1985. (Docket Entry No. 36, p. 3; Briggs Affidavit, ¶¶ 5-14, 16).

Robert F. Briggs is the main developer of FORM:DRAFT. He holds a degree in computer science and has worked as a software developer for over twenty years. Briggs describes FORM:DRAFT as a program that allows freehand drawing functions that can directly modify the image. In addition, "mechanical drafting functions were available to generate vector overlays, some or all of which could then be applied to the raster overlay." (Docket Entry No. 36, Ex. 2, ¶ 8).

> FORM:DRAFT provides for the definition of a drawing, called a sheet, made up of multiple vector overlays and a single raster image overlay. Once defined, all overlays are kept aligned and are saved and loaded and can be manipulated as a single entity.

(Docket Entry No. 36, Ex. 2, Affidavit of Briggs, ¶ 10). FORM: DRAFT allows the user to edit the drawing on the vector overlay, and either copy and paste, cut and paste, or erase from the source location. (*Id.*, ¶ 12).

American Imaging contends that the references cited by the Examiner are just as relevant as FORM:DRAFT. (Docket Entry No. 40, pp. 2-3). American Imaging points to two patents considered by the Examiner–U.S. Patent No. 4,905,185, issued to Sakai; and U.S. Patent No. 4,843,569, issued to Sawada. American Imaging contends that the '393 patent was originally rejected "because of the 'cut and paste' features, like those found in FORM: DRAFT, were found in a combination of the '185 and the '569." (Docket Entry No. 40, p. 4). The Examiner rejected the '393 patent

based on these two patents for the first time on July 26, 1990. Beginning on January 25, 1991, the inventors submitted amendments to the claims. In the remarks submitted to the PTO Examiner, the inventors stated that "[n]either *Sakai* nor *Sawada, et al.*, nor the combination thereof, discloses or suggests an apparatus and method for manipulating a scanned document in an electronic data processing system." (Docket Entry No. 40, Ex. 9, p. 7). They further stated the following:

> Specifically the cited references do not show or suggest an apparatus or method in which a first image representing a scanned document is displayed as a raster image, a second image is displayed in response to user input commands as a vector-based image superimposed on the raster image, and the raster and vector-based images are *merged* to provide an edited raster image . . . . Nor do the cited references show or suggest the unique apparatus and method claimed by Applicants in Claims 7 and 13, respectively, whereby the raster image is edited by identifying a first set of picture elements in an "on" state which are overlaid on the display by corresponding vectors of the vector-based image having a color associated with an "off" state and for changing the first set of picture elements from the "on" state to the "off" state, and by identifying a second set of picture elements in the "off" state which are overlaid on the display by corresponding vectors of the vector-based image having a color associated with the "on" state and for changing the second set of picture elements from the "off" state to the "on" state.

(Docket Entry No. 40, Ex. 9, pp. 7-8) (emphasis added).

Later, the inventors stated, "[t]his unique feature of Applicant's invention, whereby the first and second image are merged to edit the first image is neither shown nor suggested in the cited references." (*Id.*, pp. 8-9). The inventors also stated that "[t]here is no teaching or suggestion in any of the prior art references as to how a raster image can be manipulated and edited using vector-based commands." (*Id.*, p. 9). The Examiner rejected the claims again, for the same reasons.

In yet another round of amendments, the inventors pointed out the distinction between the two inventions: "Sawada fails to change the shape of any of the elements thereof. . . . [T]he reference merely teaches combining two sets of predefined vector data to produce a resultant set of vector data, without changing either of the data." (Docket Entry No. 40, Ex. 24, p. 21). The '393 patent, on the other hand, allows for modification of the shapes of graphic elements. The Examiner apparently accepted this distinction; Sawada and Sakai were not referenced again in the prosecution history.

FORM:DRAFT is capable of performing the cut-and-paste functions that Sawada and Sakai perform. However, the record before this court indicates that FORM:DRAFT cannot merge the edits from the vector overlay on the raster overlay. The prior art used in litigation must be at least as relevant as that examined by the PTO. *See Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1180 (Fed. Cir. 1995) (citing

LaBounty Mfg., Inc. v. United States Int'l Trade Comm'n, 958 F.2d 1066, 1075-76 (Fed. Cir. 1992)). FORM:DRAFT is not more relevant than the prior art considered by the PTO Examiner. FORM:DRAFT does not appear to meet the criteria necessary to consider it as prior art for the '393 patent.

C. 35 U.S.C. § 102(a)–Anticipation

A product is not patentable unless it is new. 35 U.S.C. § 102(a) states:

> A person shall be entitled to a patent unless–
>
> (a) the invention was known or used by others in this county, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent.

35 U.S.C. § 102(a) (1984). Determining whether a product is new within the meaning of the patent statute requires comparing the product with products of the relevant prior art. *See Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 619 (Fed. Cir. 1985). If a single piece of relevant prior art contains all the elements of the patent at issue, the prior art is said to have anticipated the patent. *See Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 715-16 (Fed. Cir. 1984). Anticipation is a question of fact. *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991).

American Imaging contends that SuperPaint does not anticipate the '393 patent because SuperPaint does not meet every element of the claims. Intergraph argues that SuperPaint covers each of the claims in the '393 patent, except for dependent claims 12, 35, 36, and 42. Intergraph argues that because these claims are dependent on invalid independent claims, and they do not embody some additional patentable elements, they do not save the '393 patent. (Docket Entry No. 21, p. 16).

Because this court finds that the '393 patent does not use computer-aided design and command defined narrowly, as American Imaging asserts, the argument that SuperPaint does not anticipate the '393 patent because it is not a CAD system fails. SuperPaint can accept a scanned image into its raster layer. (Docket Entry No. 23, Declaration of Snyder, ¶ 11). SuperPaint superimposes a raster layer and vector layer. (*Id.*, ¶ 8). It allows simultaneous viewing of both layers. SuperPaint "allow[s] editing in the vector layer to manipulate the image in the raster layer." (*Id.*, ¶ 13). SuperPaint can "merge" the "two layers–the original raster image in the raster layer and the modifications accomplished in the vector layer–to create a 'modified raster image' which could be saved and/or printed." (*Id.*, ¶ 12). SuperPaint allows the user to print the stored raster image on to paper. (*Id.* ¶ 13). SuperPaint embodies all of the elements of each of the claims of the '393 patent, except for claims 12, 35, 36, and 42, which are dependent claims.

Dependent claims, unless argued separately, stand or fall with the independent claims upon which they rely. *See Rowe v. Dror*, 112 F.3d 473, 478 (Fed. Cir. 1997). Dependent claims cannot stand alone in the patent process. *See Swift Agric. Chem. Corp. v. Farmland Indus., Inc.*, 674 F.2d 1351, 1358 (10th Cir. 1982). Dependent claims must add something new if the claims upon which they are dependent are anticipated.

Claim 12 states the following:

> Apparatus according to claim 8, wherein said electronic data processing system includes an operating system having an interrupt vector table, further comprising:
>
> driver identification means for identification of existence of a display driver interrupt address in the vector table,
>
> relocation means for relocating a CAD generated display driver interrupt from said display driver interrupt address to a clear location, and
>
> remapping means for remapping a link program means to said display driver interrupt address.[2]

Dependent claims 12, 35, 36, and 42, do not embody any additional patentable elements. The '393 patent, as embodied in these four claims, did not make any improvements on the prior art. SuperPaint anticipates the '393 patent.

---

[2] Claim 35 also deals with the interrupt vector table. Claims 36 and 42 add only the concept of the display driver as applied to the invention.

According to American Imaging's claim interpretation, the system requires a "computer whose base system programming includes interrupt vector tables. . . . [The tables] tell the computer the location of programs which perform the basic functions of the computer, such as displaying items on the screen." (Docket Entry No. 25, p. 15). American Imaging notes that the interrupt vector tables are a feature of IBM's DOS and cannot be found on Macintosh computers; SuperPaint does not use interrupt vector tables.

Intergraph asserts that interrupt vector tables were well known in the art before the '393 patent and therefore not unique or novel. Intergraph argues that the "specification of an apparatus having an interrupt vector table adds nothing to the functionality of the patented invention and would be within the capabilities of a reasonably competent programmer to adapt the claimed invention to such an apparatus." (Docket Entry No. 32, p. 20). Snider, who designed the SuperPaint program, stated that "[a]s in most modern computers, these details are handled automatically by the operating system. There is nothing unique or novel about these details. Any reasonably competent software programmer can write a software program which addresses these issues in an appropriate manner for a given operating system and computer hardware." (Docket Entry No. 23, Declaration of Snider, ¶ 14).

D. 35 U.S.C. § 103–Obviousness

35 U.S.C. § 103 states the following:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

35 U.S.C. § 103(a) (Supp. 1998).

Obviousness is an issue of law based on underlying determinations of fact. *See Monarch Knitting Mach. Corp. v. Sulzer Morat GmbH*, 139 F.3d 877, 881 (Fed. Cir. 1998). These underlying factual determinations include:

> 1) the scope and content of the prior art
>
> 2) the level of ordinary skill in the art
>
> 3) the differences between the claimed invention and the prior art; and
>
> 4) the extent of any proffered objective indicia of non-obviousness.

See id; see also Graham v. John Deere Co., 383 U.S. 1, 17-18 (1966). "The inquiry is not whether there was a 'real discovery of merit' or whether the claimed invention offered a 'new solution,' but whether the claimed subject matter as a whole 'would have been obvious at the time the invention was made to a person having ordinary skill

in the art.'" *Monarch*, 139 F.3d at 881 (quoting 35 U.S.C. § 103(a) (Supp. I 1995)). Obviousness "'is distinct from novelty in the sense that an invention may be obvious even though it is not identically disclosed anywhere in the prior art.'" *Abbott Labs. v. Diamedix Corp.*, 969 F. Supp. 1064, 1071 (N.D. Ill. 1997) (quoting 2 DONALD S. CHISUM, CHISUM ON PATENTS §5.01, at 5-10 to 5-11 (1994)). The obviousness test is "not one which turns on whether an invention is equivalent to some element of the prior art but rather whether the difference between the prior art and the subject matter in question 'is a different [sic] sufficient to render the claimed subject matter unobvious to one skilled in the applicable art.'" *Dann v. Johnston*, 425 U.S. 219, 228 (1976) (quoting *In re Johnston*, 502 F.2d 765, 772 (C.C.P.A. 1974) (Markey, C.J., dissenting)); *see also Smith v. ACME Gen. Corp.*, 614 F.2d 1086, 1093 (6th Cir. 1980) ("Prior art need not be exactly the same in order to be applicable; differences between the prior art and the invention are permitted. This is to say that the mere existence of differences between the prior art and an invention does not establish the invention's nonobviousness, particularly where, as here, the prior art and the invention are substantially similar." (citing *Dann*, 425 U.S. at 229-30)).

American Imaging maintains that SuperPaint differs from the '393 patent because SuperPaint is a graphics editor, not a CAD system, and the '393 patent adds a further limitation by describing a system for manipulating the interrupt vector tables.

(Docket Entry No. 31, p. 13). This court has determined that SuperPaint is a computer-aided design system as the '393 patent defines the term, and that the interrupt vector tables are a simple adaptation to IBM software and not independently patentable. Intergraph also argues that "a software programmer of ordinary skill would naturally be able to take the SuperPaint program and 'invent' what is described in the '393 patent." (Docket Entry No. 21, p. 18). American Imaging responds that the "comparison is not to be made between fields to apply the skills of one field to another field. . . . As is evident from the comparison of SuperPaint to the claims of the patent, SuperPaint was not within the field of the invention. It is not an indicator of the level of skill in the art of development of CAD packages or CAD package add-ons." (Docket Entry No. 31, p. 13).

In this case, the pertinent art is computer software programming; the level of ordinary skill is in designing computer programs. American Imaging's argument rests on the distinction between CAD systems and graphics editing programs, a distinction defeated by the '393 patent's broad definition of a CAD system.

The Federal Circuit has stated that the scope of the prior art is governed by two questions: "(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent: to the particular

problem with which the inventor is involved." *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992) (citations omitted). SuperPaint and the '393 patent are within the same field. Even if they were in different fields, SuperPaint addresses the same basic problem that the '393 inventors address. When SuperPaint was sold and copyrighted, computer programmers were aware of the need to scan hard copies into a computer and manipulate them on the computer. SuperPaint invented a more efficient method for manipulating the scanned image, by merging the vector and raster layers and permitting changes in the raster layer by manipulating the vector layer. Although SuperPaint does not incorporate associated nongraphical data, it was obvious that the same objective could be achieved by adding programs with different data bases, capabilities, and applications. *See Dann v. Johnston*, 425 U.S. 219, 229-30 (1976) ("There may be differences between respondent's invention and the state of the prior art. . . . It may be that the ability is not possessed to the same extent either by existing machine systems in the [] industry or by the [patented] system. But the mere existence of differences between the prior art and an invention does not establish the invention's nonobviousness. The gap between the prior art and respondent's system is simply not so great as to render the system nonobvious to one reasonably skilled in the art."). American Imaging has not raised a genuine issue of material fact that the invention claimed in the '393 patent was not obvious.

American Imaging also argues that other indicia of nonobviousness, such as commercial success and "long felt but unsolved need," favor a finding for American Imaging. American Imaging argues that the '393 patent was a great commercial success at trade shows because it solved the problem of converting a paper drawing into a drawing that could be manipulated and stored in a CAD system. A consideration of these factors, American Imaging argues, shows that the '393 patent was not obvious.

American Imaging has not pointed to evidence showing commercial success of the '393 patent. American Imaging has provided only Bennett's deposition testimony that LunaLink and LunaEdit received attention at a trade show. This testimony does not raise a fact issue disputing obviousness, considering the teachings of the prior art. *See Miles Labs., Inc. v. Shandon Inc.*, 997 F.2d 870, 878 (Fed. Cir. 1993) ("Such evidence, if present, would weigh in favor of non-obviousness, although the lack of such evidence does not weigh in favor of obviousness." (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955 (Fed. Cir. 1986))).

E. 35 U.S.C. § 102(b)–The On-Sale Bar

35 U.S.C. § 102(b) states the following:

A person shall be entitled to a patent unless–

. . . .

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the ate of the application for patent in the United States.

An invention that was on sale in the United States more than one year prior to the date of the patent application is not entitled to a patent. To invalidate a patent under § 102(b), the party asserting the on-sale bar must demonstrate by clear and convincing evidence "that there was a definite sale or offer to sell more than one year before the application for the subject patent, and that the subject matter of the sale or offer to sell fully anticipated the claimed invention or would have rendered the claimed invention obvious by its addition to the prior art." *Isogon Corp. v Amdahl Corp.*, No. 97 CIV. 6219(SAS), 1998 WL 811849 at *1 (S.D. N.Y. Nov. 19, 1998) (quoting *UMC Elec. Co. v. United States*, 816 F.2d 647, 656 (Fed. Cir. 1987)).

Before the Supreme Court's decision in *Pfaff v. Wells Electronics, Inc.*, 119 S. Ct. 304 (1998), a section 102(b) bar required a showing that the invention was "substantially complete" at the time of the offer for sale. *See Pfaff v. Wells Electronics, Inc.*, 124 F.3d 1429, 1434 (Fed. Cir. 1997). The test for deciding if an invention was substantially complete was whether, at the time of the offer, there was "reason to expect that [the invention] would work for its intended purpose upon

completion." *Id.* (quoting *Micro Chem., Inc. v. Great Plains Chem. Co., Inc.*, 103 F.3d 1538, 1545 (Fed. Cir.), *cert. denied*, 117 S. Ct. 2516 (1997)).

The Supreme Court has recently held that the 'substantially complete' standard seriously undermines the "interest in providing inventors with a definite standard for determining when a patent application must be filed." *Pfaff*, 119 S. Ct. at 311. The Supreme Court replaced that standard with a two-part test for the application of the on-sale bar. *Id.* at 311-12. "First, the product must be the subject of a commercial offer for sale." *Id.* at 311. "Second, the invention must be *ready for patenting*." *Id.* at 312 (emphasis added). This second condition "may be satisfied in at least two ways: by proof of reduction to practice before the critical date; or by proof that prior to the critical date the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." *Id.* "A process is reduced to practice when it is successfully performed. A machine is reduced to practice when it is assembled adjusted and used. A manufacture is reduced to practice when it is completely manufactured. A composition of matter is reduced to practice when it is completely composed." *Id.* at 307 n.2 (quoting *Corona Cord Tire Co. v. Dovan Chem. Corp.*, 276 U.S. 358, 383 (1928)).

In this case, Intergraph has alleged that the '393 patent is invalid because the LunaLink and LunaEdit software was offered for sale by American Imaging at the A/E/C trade show in Chicago in May of 1988, and was actually sold on May 24, 1988, more than one year prior to the filing of the priority application on June 14, 1989. Intergraph also alleges that SuperPaint is prior art against the '393 patent.[3]

American Imaging disputes the on-sale bar allegation, arguing that even if such an offer was made, the invention was not substantially complete. American Imaging has not disputed that the invention was offered for sale and actually sold on May 24, 1988. Intergraph has presented the testimony of Mr. Bennett and Mr. Opincar, co-inventors of the '393 patent, and a sales order and invoice. (*Markman* Hearing, Ex. 14). Mr. Bennett testified that the invention was offered for sale in May 1988. Mr. Opincar testified that the invention was advertised and shown at a trade show in May of 1988. Finally, Intergraph has admitted into evidence an American Imaging sales order and invoice reflecting an order for the LunaLink and LunaEdit software on May 24, 1988.

---

[3] Because SuperPaint has already been found to anticipate or render obvious all of the claims in the '393 patent, only the Luna software will be considered in the on-sale bar context.

This court finds that Intergraph has shown by clear and convincing evidence that there was a definite commercial offer to sell the claimed invention on May 24, 1988. Intergraph has satisfied the first condition of the *Pfaff* test.

As to the second condition of the *Pfaff* test, an invention need not be substantially completed for the on-sale bar to apply. *Pfaff*, 119 S. Ct. at 311-12. The Federal Circuit has recognized that once the functions of a piece of software have been disclosed with particularity, one skilled in the art can generally practice the invention by writing the specific source code required. *See Robotic Vision Sys., Inc. v. View Eng'g., Inc.*, 112 F.3d 1163, 1166 (Fed. Cir. 1997); *Fonar Corp. v. General Elec. Co.*, 107 F.3d 1543, 1549-50 (Fed. Cir. 1997); *In re Hayes Microcomputer Prods., Inc. Patent Litig.*, 982 F.2d 1527, 1537-38 (Fed. Cir. 1992). If before June 15, 1988, the LunaLink and LunaEdit software were described in sufficient detail for one skilled in the art to complete the specific source code required to enable the invention, the on-sale bar would apply to invalidate the '393 patent.

Bennett testified that: 1) the LunaLink software was completed on March 15, 1988, and was demonstrated in a working form at the A/E/C trade show in May of 1988; 2) attendees of the trade show in May of 1988 were told about the future availability of LunaEdit, and were also given brochures discussing LunaEdit; 3) he believed that he began work on LunaEdit after LunaLink was near completion; and 4)

he estimated that completing LunaEdit took approximately six months. Mr. Opincar testified that LunaEdit was completed in late 1988 or early 1989.

Intergraph has presented evidence that LunaLink was described in sufficient detail to meet the "ready for patenting" condition on or before June 15, 1988. However, it has not met its burden of presenting the necessary evidence that LunaEdit was described sufficiently so that one skilled in the art could practice the invention.

This court finds disputed issues of material fact as to whether the claimed invention was described in sufficient detail on or before June 15, 1988 such that it was "ready for patenting" under the second condition of the *Pfaff* test. Accordingly, this court DENIES Intergraph's summary judgment motion on the applicability of the § 102(b) on-sale bar.

IV. Conclusion

This court GRANTS Intergraph's motion for summary judgment on anticipation and obviousness, but DENIES Intergraph's motion for summary judgment on the applicability of the § 102(b) on-sale bar. Because all claims of the '393 patent have been found invalid, this court GRANTS summary judgment for Intergraph.

SIGNED on March 16, 1999, at Houston, Texas.

Lee H. Rosenthal
United States District Judge